

**WHAT IS CLAIMED IS:**

1. An isolated polynucleotide comprising the nucleotide sequence that encodes a protein having the following amino acid sequence:

5 Met-Gln-Gln-Asp-Leu-Met-Arg-Ser-Arg-Leu-Asp-Thr-Glu-Val-Ala-Asn-  
Leu-Ser-Val-Ile-Met-Glu-Glu-Met-Lys-Leu-Val-Asp-Ser-Lys-His-Gly-  
Gln-Leu-Ile-Lys-Asn-Phe-Thr-Ile-Leu-Gln-Gly-Pro-Pro-Gly-Pro-Arg-  
Gly-Pro-Arg-Gly-Asp-Arg-Gly-Ser-Gln-Gly-Pro-Pro-Gly-Pro-Thr-Gly-  
Asn-Lys-Gly=Gln=Lys=Gly=Glu=Lys=Glu=Pro=Gly=Pro=Pro=Gly=Pro=

10 Ala-Gly-Glu-Arg-Gly-Pro-Ile-Gly-Pro-Ala-Gly-Pro-Pro-Gly-Glu-Arg-  
Gly-Gly-Lys-Gly-Ser-Lys-Gly-Ser-Gln-Gly-Pro-Lys-Gly-Ser-Arg-Gly-  
Ser-Pro-Gly-Lys-Pro-Gly-Pro-Gln-Gly-Pro-Ser-Gly-Asp-Pro-Gly-Pro-  
Pro-Gly-Pro-Pro-Gly-Lys-Glu-Gly-Leu-Pro-Gly-Pro-Gln-Gly-Pro-Pro-  
Gly-Phe-Gln-Gly-Leu-Gln-Gly-Thr-Val-Gly=Glu-Pro-Gly-Val-Pro-Gly-  
Pro-Arg-Gly-Leu-Pro-Gly-Leu-Pro-Gly-Val-Pro-Gly-Met-Pro-Gly-Pro-  
Lys-Gly-Pro-Pro-Gly-Pro-Pro-Gly-Pro-Ser-Gly-Ala-Val-Val-Pro-Leu-  
Ala-Leu-Gln-Asn-Glu-Pro-Thr-Pro-Ala-Pro-Glu-Asp-Asn-Gly-Cys-Pro-  
Pro-His-Trp-Lys-Asn-Phe-Thr-Asp-Lys-Cys-Tyr-Tyr-Phe-Ser-Val-Glu-  
Lys-Glu-Ile-Phe-Glu-Asp-Ala-Lys-Leu-Phe-Cys-Glu-Asp-Lys-Ser-Ser-  
20 His-Leu-Val-Phe-Ile-Asn-Thr-Arg-Glu-Glu-Gln-Gln-Trp-Ile-Lys-Lys-  
Gln-Met-Val-Gly-Arg-Glu-Ser-His-Trp-Ile-Gly-Leu-Thr-Asp-Ser-Glu-  
Arg-Glu-Asn-Glu-Trp-Lys-Trp-Leu-Asp-Gly-Thr-Ser-Pro-Asp-Tyr-Lys-  
Asn-Trp-Lys-Ala-Gly-Gln-Pro-Asp-Asn-Trp-Gly-His-Gly-His-Gly-Pro-  
Gly-Glu-Asp-Cys-Ala-Gly-Leu-Ile-Tyr-Ala-Gly-Gln-Trp-Asn-Asp-Phe-  
25 Gln-Cys-Glu-Asp-Val-Asn-Asn-Phe-Ile-Cys-Glu-Lys-Asp-Arg-Glu-Thr-  
Val-Leu-Ser-Ser-Ala-Leu (SEQ ID NO:2, 206-547).

2. An isolated polynucleotide comprising the nucleotide sequence that

encodes a protein having the following amino acid sequence:

Met-Lys-Leu-Val-Asp-Ser-Lys-His-Gly-Gln-Leu-Ile-Lys-Asn-Phe-Thr-  
Ile-Leu-Gln-Gly-Pro-Pro-Gly-Pro-Arg-Gly-Pro-Arg-Gly-Asp-Arg-Gly-  
Ser-Gln-Gly-Pro-Pro-Gly-Pro-Thr-Gly-Asn-Lys-Gly-Gln-Lys-Gly-Glu-  
Lys-Gly-Glu-Pro-Gly-Pro-Pro-Gly-Pro-Ala-Gly-Glu-Arg-Gly-Pro-Ile-  
Gly-Pro-Ala-Gly-Pro-Pro-Gly-Glu-Arg-Gly-Gly-Lys-Gly-Ser-Lys-Gly-  
Ser-Gln-Gly-Pro-Lys-Gly-Ser-Arg-Gly-Ser-Pro-Gly-Lys-Pro-Gly-Pro-  
Gln-Gly-Pro-Ser-Gly-Asp-Pro-Gly-Pro-Pro-Gly-Pro-Pro-Gly-Lys-Glu-  
Gly-Leu-Pro-Gly-Pro-Gln-Gly-Pro-Pro-Gly-Phe-Gln-Gly-Leu-Gln-Gly-  
Thr-Val-Gly-Glu-Pro-Gly-Val-Pro-Gly-Pro-Arg-Gly-Leu-Pro-Gly-Leu-  
Pro-Gly-Val-Pro-Gly-Met-Pro-Gly-Pro-Lys-Gly-Pro-Pro-Gly-Pro-Pro-  
Gly-Pro-Ser-Gly-Ala-Val-Val-Pro-Leu-Ala-Leu-Gln-Asn-Glu-Pro-Thr-  
Pro-Ala-Pro-Glu-Asp-Asn-Gly-Cys-Pro-Pro-His-Trp-Lys-Asn-Phe-Thr-  
Asp-Lys-Cys-Tyr-Tyr-Phe-Ser-Val-Glu-Lys-Glu-Ile-Phe-Glu-Asp-Ala-  
Lys-Leu-Phe-Cys-Glu-Asp-Lys-Ser-Ser-His-Leu-Val-Phe-Ile-Asn-Thr-  
Arg-Glu-Glu-Gln-Gln-Trp-Ile-Lys-Lys-Gln-Met-Val-Gly-Arg-Glu-Ser-  
His-Trp-Ile-Gly-Leu-Thr-Asp-Ser-Glu-Arg-Glu-Asn-Glu-Trp-Lys-Trp-  
Leu-Asp-Gly-Thr-Ser-Pro-Asp-Tyr-Lys-Asn-Trp-Lys-Ala-Gly-Gln-Pro-  
Asp-Asn-Trp-Gly-His-Gly-Pro-Gly-Glu-Asp-Cys-Ala-Gly-Leu-  
Ile-Tyr-Ala-Gly-Gln-Trp-Asn-Asp-Phe-Gln-Cys-Glu-Asp-Val-Asn-Asn-  
Phe-Ile-Cys-Glu-Lys-Asp-Arg-Glu-Thr-Val-Leu-Ser-Ser-Ala-Leu (SEQ ID N  
O: 2, 229-547).

3. The polynucleotide according to claim 2, wherein said protein further comprises the following amino acid sequence upstream of the first methionine residue (SEQ ID NO:2, 229):

Met-Glu-Glu (SEQ ID NO: 2, 226-228); or

Met-Arg-Ser-Arg-Leu-Asp-Thr-Glu-Val-Ala-Asn-Leu-Ser-Val-Ile-Met-Glu-Glu (SEQ ID NO: 2, 211-228).

5 4. The polynucleotide according to claim 2, wherein said protein further comprises the following amino acid sequence upstream of the first methionine residue (SEQ ID NO: 2, 229):

Met-Glu-Asn-Ile-Thr-Thr-Ile-Ser-Gln-Ala-Asn-Glu=Gln-Asn-Leu-Lys-  
Asp-Leu-Gln-Asp-Leu-His-Lys-Asp-Ala-Glu-Asn-Arg-Thr-Ala-Ile-Lys-  
Phe-Asn-Gln-Leu-Glu-Glu-Arg-Phe-Gln-Leu-Phe-Glu-Thr-Asp-Ile-Val-  
Asn-Ile-Ile-Ser-Asn-Ile-Ser-Tyr-Thr-Ala-His-His-Leu-Arg-Thr-Leu-  
Thr-Ser-Asn-Leu-Asn-Glu-Val-Arg-Thr-Thr-Cys-Thr-Asp-Thr-Leu-Thr-  
Lys-His-Thr-Asp-Asp-Leu-Thr-Ser-Leu-Asn-Asn-Thr-Leu-Ala-Asn-Ile-  
Arg-Leu-Asp-Ser-Val-Ser-Leu-Arg-Met=Gln-Gln-Asp-Leu-Met-Arg-Ser-  
Arg-Leu-Asp-Thr-Glu-Val-Ala-Asn-Leu-Ser-Val-Ile-Met-Glu-Glu (SEQ ID N  
O: 102-228);

10 Met-Asn-Ser-Gln-Leu-Asn-Ser-Phe-Thr-Gly=Gln-Met-Glu-Asn-Ile-Thr-  
Thr-Ile-Ser-Gln-Ala-Asn-Glu=Gln-Asn-Leu-Lys-Asp-Leu-Gln-Asp-Leu-  
His-Lys-Asp-Ala-Glu-Asn-Arg-Thr-Ala-Ile-Lys-Rhe-Asn-Gln-Leu-Glu-  
Glu-Arg-Phe-Gln-Leu-Phe-Glu-Thr-Asp-Ile-Val-Asn-Ile-Ile-Ser-Asn-  
Ile-Ser-Tyr-Thr-Ala-His-His-Leu-Arg-Thr-Leu-Thr-Ser-Asn-Leu-Asn-  
Glu-Val-Arg-Thr-Thr-Cys-Thr-Asp-Thr-Leu-Thr-Lys-His-Thr-Asp-Asp-  
Leu-Thr-Ser-Leu-Asn-Asn-Thr-Leu-Ala-Asn-Ile-Arg-Leu-Asp-Ser-Val-  
Ser-Leu-Arg-Met=Gln-Gln-Asp-Leu-Met-Arg-Ser-Arg-Leu-Asp-Thr-Glu-  
Val-Ala-Asn-Leu-Ser-Val-Ile-Met-Glu-Glu (SEQ ID NO: 2, 91-228);  
20 Met-Asn-Leu-Asn-Asn-Leu-Asn-Leu-Thr-Gln-Val-Gln-Gln-Arg-Asn-Leu-  
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Ile-Thr-Asn-Leu-Gln-Arg-Ser-Val-Asp-Asp-Thr-Ser-Gln-Ala-Ile-Gln-  
Arg-Ile-Lys-Asn-Asp-Phe-Gln-Asn-Leu-Gln-Gln-Val-Phe-Leu-Gln-Ala-  
Lys-Lys-Asp-Thr-Asp-Trp-Leu-Lys-Glu-Lys-Val-Gln-Ser-Leu-Gln-Thr-  
Leu-Ala-Ala-Asn-Asn-Ser-Ala-Leu-Ala-Lys-Ala-Asn-Asn-Asp-Thr-Leu-  
Glu-Asp-Met-Asn-Ser-Gln-Leu-Asn-Ser-Phe-Thr-Gly-Gln-Met-Glu-Asn-  
Ile-Thr-Thr-Ile-Ser-Gln-Ala-Asn-Glu-Gln-Asn-Leu-Lys-Asp-Leu-Gln-  
Asp-Leu-His-Lys-Asp-Ala-Glu-Asn-Arg-Thr-Ala-Ile-Lys-Phe-Asn-Gln-  
Leu=Glu=Glu=Arg=Phe=Gln=Leu=Phe=Glu=Thr-Asp-Ile=Val-Asn-Ile=Ile-  
Ser-Asn-Ile-Ser-Tyr-Thr-Ala-His-His-Leu-Arg-Thr-Leu-Thr-Ser-Asn-  
Leu-Asn-Glu-Val-Arg-Thr-Thr-Cys-Thr-Asp-Thr-Leu-Thr-Lys-His-Thr-  
Asp-Asp-Leu-Thr-Ser-Leu-Asn-Asn-Thr-Leu-Ala-Asn-Ile-Arg-Leu-Asp-  
Ser-Val-Ser-Leu-Arg-Met-Gln-Gln-Asp-Leu-Met-Arg-Ser-Arg-Leu-Asp-  
Thr-Glu-Val-Ala-Asn-Leu-Ser-Val Ile-Met=Glu=Glu (SEQ ID NO: 2, 9-228);  
or  
Met-Tyr-Ser-His-Asn-Val-Val-Ile-Met-Asn-Leu-Asn-Asn-Leu-Asn-Leu-  
Thr-Gln-Val-Gln-Gln-Arg-Ash-Leu-Ile-Thr-Asn-Leu-Gln-Arg-Ser-Val-  
Asp-Asp-Thr-Ser-Gln-Ala-Ile-Gln-Arg-Ile-Lys-Asn-Asp-Phe-Gln-Asn-  
Leu-Gln-Gln-Val-Phe-Leu-Gln-Ala-Lys-Lys-Asp-Thr-Asp-Trp-Leu-Lys-  
Glu-Lys-Val-Gln-Ser-Leu-Gln-Thr-Leu-Ala-Ala-Asn-Asn-Ser-Ala-Leu-  
Ala-Lys-Ala-Asn-Asn-Asp-Thr-Leu-Glu-Asp-Met-Asn-Ser-Gln-Leu-Asn-  
Ser-Phe-Thr-Gly-Gln-Met-Glu-Asn-Ile-Thr-Thr-Ile-Ser-Gln-Ala-Asn-  
Glu-Gln-Asn-Leu-Lys-Asp-Leu-Gln-Asp-Leu-His-Lys-Asp-Ala-Glu-Asn-  
Arg-Thr-Ala-Ile-Lys-Phe-Asn-Gln-Leu-Glu-Glu-Arg-Phe=Gln-Leu-Phe-  
Glu-Thr-Asp-Ile=Val-Asn-Ile=Ile-Ser-Asn-Ile-Ser-Tyr-Thr-Ala-His-  
His-Leu-Arg-Thr-Leu-Thr-Ser-Asn-Leu-Asn-Glu-Val-Arg-Thr-Thr-Cys-  
Thr-Asp-Thr-Leu-Thr-Lys-His-Thr-Asp-Asp-Leu-Thr-Ser-Leu-Asn-Asn-

100  
150  
200  
250

Thr-Leu-Ala-Asn-Ile-Arg-Leu-Asp-Ser-Val-Ser-Leu-Arg-Met-Gln-Gln-Asp-Leu-Met-Arg-Ser-Arg-Leu-Asp-Thr-Glu-Val-Ala-Asn-Leu-Ser-Val-Ile-Met-Glu-Glu (SEQ ID NO: 2, 1-228).

5. An isolated polynucleotide comprising a nucleotide sequence having the following nucleotide sequence:

atgcaacaag atttgtatgag gtcgagggtta gacactgaag tagccaactt atcagtgatt  
atggaagaaa tgaagtagt agactccaag catggtcagc tcatcaagaa ttttacaata  
ctacaaggtc caccgggcgc caggggtcca agaggtgaca gaggatccca gggaccccct  
ggcccaactg gcaacaaggg acagaaagga gagaaggggg agcctggacc acctggccct  
gcgggtgaga gaggcccaat tggaccagct ggtccccccg gagagcgtgg cggcaaagga  
tctaaaggct cccagggccc caaaggctcc cgtggttccc ctgggaagcc cggccctcag  
ggcccccagtg gggacccagg ccccccggc ccaccaggca aagagggact ccccgccct  
cagggccctc ctggcttcca gggacttcag ggcaccgttg gggagcctgg ggtgcctgga  
cctcggggac tgccaggctt gctggggta ccaggcatgc caggcccaa gggccccccc  
ggccctcctg gcccattcagg agcggtggtg cccctggcc ttgcagaatga gccaaaccccg  
gcaccggagg acaatggctg cccgcctcac tggaagaact tcacagacaa atgctactat  
tttcagttt agaaagaaat ttttggaggat gcaaagcttt tctgtgaaga caagtcttca  
catcttgttt tcataaacac tagagaggaa cagcaatgga taaaaaaaca gatggtaggg  
20 agagagagcc actggatcg cctcacagac tcagagcgtg aaaatgaatg gaagtggctg  
gatgggacat ctccagacta caaaaattgg aaagctggac agccggataa ctggggtcat  
ggccatggc caggagaaga ctgtgctggg ttgatttatg ctggcagtg gaacgatttc  
caatgtgaag acgtcaataa cttcatttc gaaaaagaca gggagacagt actgtcatct  
gcatta (SEQ ID NO: 1, 670-1695).

6. An isolated polynucleotide comprising a nucleotide sequence having

the following nucleotide sequence:

atgaagctag tagactccaa gcatggtcag ctcataaga atttacaat actacaagg  
ccaccgggcc ccaggggtcc aagaggtgac agaggatccc agggaccccc tggcccaact  
ggcaacaagg gacagaaaagg agagaagggg gagcctggac cacctggccc tgcgggttag  
5 agaggccaa ttggaccagc tggtccccc ggagagcgtg gcggcaaagg atctaaaggc  
tcccaggggcc ccaaggctc ccgtggttcc cctgggaagc cggccctca gggcccccagt  
ggggacccag gccccccggg cccaccaggc aaagagggac tccccggccc tcagggccct  
cctggcttcc agggacttca gggcacccgtt ggggagccctg gggtgccctgg acctcgggga  
ctgccaggct tgcctgggtt accaggcatg ccaggccca agggccccc cggccctcct  
10 gccccatcag gagcgggttgtt gcccctggcc ctgcagaatg agccaacccc ggcacccggag  
gacaatggct gcccgcctca ctggaaagaac ttcacagaca aatgctacta ttttcagtt  
gagaaagaaa ttttgagga tgcaagctt ttctgtgaag acaagtcttc acatcttgg  
ttcataaaca ctagagagga acagcaatgg ataaaaaaac agatggtagg gagagagagc  
cactggatcg gcctcacaga ctcagagcgt gaaaatgaat ggaagtggct ggtatggaca  
15 tctccagact acaaaaattg gaaagctgga cagccggata actgggtca tggccatggg  
ccaggagaag actgtgctgg gttgatttat gctgggcagt ggaacgattt ccaatgtcaa  
gacgtcaata acttcatttg cgaaaaagac agggagacag tactgtcatc tgcattta  
(SEQ ID NO: 1, 739-1695).

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7. The polynucleotide according to claim 6 further comprises the following nucleotide sequence 5' upstream of said nucleotide sequence:

atggaagaa (SEQ ID NO: 1, 730-738); or

atgagggtcga gtttagacac tgaagtagcc aacttatcag tgattatgga agaa (SEQ ID NO: 1, 685-738).

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8. The polynucleotide according to claim 6 further comprises the following

nucleotide sequence 5' upstream of said nucleotide sequence:

atggagaaca tcaccactat ctctcaagcc aacgaggcaga acctgaaaga cctgcaggac  
ttacacaaag atgcagagaa tagaacagcc atcaagtta accaactgga ggaacgcttc  
cagcttttg agacggatat tgtgaacatc attagcaata tcagttacac agcccaccac  
5 ctgcggacgc tgaccagcaa tctaaatgaa gtcaggacca cttgcacaga tacccttacc  
aaacacacag atgatctgac ctccttgaat aataccctgg ccaacatccg tttggattct  
gtttctctca ggatgcaaca agatttgatg aggtcgaggt tagacactga agtagccaac  
ttatcagtga ttatggaaga a (SEQ ID NO: 1, 358-738);

100 atgaacagcc agctcaactc attcacaggt cagatggaga acatcaccac tatctctcaa  
gccaaacgagc agaacctgaa agacctgcag gacttacaca aagatgcaga gaatagaaca  
gccatcaagt tcaaccaact ggaggaacgc ttccagctct ttgagacgga tattgtgaac  
atcattagca atatcagtta cacagccac cacctgcgga cgctgaccag caatctaatt  
gaagtcagga ccacttgac agataccctt accaaacaca cagatgatct gaccccttg  
150 aataataccc tggccaacat ccgtttggat tctgtttctc tcaggatgca acaagatttg  
atgaggtcga gtttagacac tgaagtagcc aacttatcag tgattatgga agaa (SEQ ID NO:  
1, 325-738);

200 atgaacctca acaacctgaa cctgacccag gtgcaggcaga ggaacctcat cacgaatctg  
cagcggctcg tggatgacac aageccaggct atccagcgaa tcaagaacga ctttcaaaat  
ctgcagcagg ttttcttca agccaagaag gacacggatt ggctgaagga gaaagtgcag  
agcttcaga cgctggctgc caacaactct gcgttggcca aagccaaaca cgacaccctg  
250 gagatatga acagccagct caactcattc acaggtcaga tggagaacat caccactatc  
tctcaagcca acgaggcaga cctgaaagac ctgcaggact tacacaaaga tgcagagaat  
agaacagcca tcaagttcaa ccaactggag gaacgcttcc agcttttg gacggatatt  
gtgaacatca ttagcaatc cagttacaca gcccaccacc tgcggacgct gaccagcaat  
ctaaatgaag tcaggaccac ttgcacagat acccttacca aacacacaga tgatctgacc  
tccttgaata ataccctggc caacatccgt ttggattctg tttctctcag gatgcaacaa

gatttgatga ggtcgagggtt agacactgaa gtagccaact tatcagtgtat tatggaaagaa (SEQ I

D NO: 1, 79-738);

atgtattctc ataatgtggt catcatgaac ctaacaacc tgaacctgac ccaggtgcag

cagaggaacc tcatacacgaa tctgcagcgg tctgtggatg acacaagcca ggctatccag

5

cgaatcaaga acgactttca aaatctgcag caggttttc ttcaagccaa gaaggacacg

gattggctga aggagaaaagt gcagagctt cagacgctgg ctgccaacaa ctctgcgtt

gccaaagcca acaacgacac cctggaggat atgaacagcc agctcaactc attcacaggt

cagatggaga acatcaccac tatctctcaa gccaaacgagc agaacctgaa agacctgcag

gacttacaca aagatgcaga gaatagaaca gccatcaagt tcaaccaact ggaggaacgc

ttccagctt ttgagacgga tattgtAAC atcattAGCA atatcAGTT cacagcccac

cacctgcgga cgctgaccag caatetaaat gaagtcagga ccacttgcAC agataccctt

accaaacaca cagatgatct gacotcctt aataataccc tggccaaacat ccgtttggat

tctgtttctc tcaggatgca acaagattt atgaggtcga gtttagacac tgaagtagcc

aacttatcag tgattatgga agaa (SEQ ID NO:1, 55-738); or

gtcacgaatc tgcagcaaga taccagctgt ctccaggcA atctgcagaa ccaaatgtat

tctcataatg tggcatcat gaacctcaac aacotgaacc tgacccaggt gcagcagagg

aacctcatca cgaatctgca gcggctgtg gatgacacaa gccaggctat ccagcgaatc

aagaacgact ttcaaaatct gcagcaggTT ttcttcAAG ccaagaagga cacggattgg

ctgaaggaga aagtgcagag ctgcagacg ctggctgcca accactctgc gttggccaaa

20

gccaaacaacg acaccctgga ggatatgAAC agccagctca actcattcac aggtcagatg

gagaacatca ccactatctc tcaagccAAc gagcagaacc tggaaagacct gcaggactta

cacaaagatg cagagaatag aacagccATC aagttcaacc aactggagGA acgcttccag

ctcttgaga cggatattgt gaacatcatt agcaatatca gttacacagc ccaccacctg

cgagcgtga ccagcaatct aaatgaagtc aggaccatt gcacagatac cttaccaaa

25

cacacagatg atctgacctc cttgaataat accctggcA accatccgttt ggattctgtt

tctctcagga tgcaacaaga tttgatgagg tcgaggttag acactgaagt agccaactta

tcagtgatta tggaagaa (SEQ ID NO: 1, 1-738).

- 5 9. The polynucleotide according to any one of claims 5 to 8 further comprises the following nucleotide sequence 3' downstream of said nucleotide sequence:

taacggactg tgatggatc acatgagcaa atttcagct ctc当地aggca aaggacactc  
ctttctaatt gcatcacctt ct当地atcagat tgaaaaaaaaaaa aaaaggactg aaaaccaatt  
actgaaaaaaaaaaa aatttgc当地agc tagtgtttt taccatccgt cattacccaa agacttggga  
actaaaaatgt tccccagggt gatatgctga ttttcattgt gcacatggac tgaatcacat  
agatttcctt cc当地tcagtaa cc当地tgc当地attt atacaatatta tgtcttccaa agtatggAAC  
actccaatca gaaaaagggtt atcatcccg (SEQ ID NO: 1, 1696-2024).

- 10 10. An isolated polynucleotide encoding a novel collectin, which can hybridize under a stringent condition with a probe that is an amplification product from PCR reaction performed using primers having the following nucleotide sequences:

15 caatctgatgagaagggtgatg(SEQ ID NO: 4) and  
acgaggggctggatggacat(SEQ ID NO: 5).

- 20 11. A polynucleotide which can hybridize under a stringent condition with any one of the polynucleotide according to any one of claims 1 to 10, wherein the protein encoded by said polynucleotide is a novel collectin which comprises: (1)  $\text{Ca}^{2+}$ -dependent carbohydrate recognition domain (CRD), and (2) collagen-like region.

- 25 12. The polynucleotide according to any one of claims 1 to 11, wherein said polynucleotide is cDNA.

13. A novel collectin comprising the amino acid sequence encoded by the polynucleotide according to any one of claims 5 to 12.

- 30 14. A novel collectin comprising the amino acid sequence:

Met-Gln-Gln-Asp-Leu-Met-Arg-Ser-Arg-Leu-Asp-Thr-Glu-Val-Ala-Asn-  
Leu-Ser-Val-Ile-Met-Glu-Glu-Met-Lys-Leu-Val-Asp-Ser-Lys-His-Gly-  
Gln-Leu-Ile-Lys-Asn-Phe-Thr-Ile-Leu-Gln-Gly-Pro-Pro-Gly-Pro-Arg-  
Gly-Pro-Arg-Gly-Asp-Arg-Gly-Ser-Gln-Gly-Pro-Pro-Gly-Pro-Thr-Gly-  
Asn-Lys-Gly-Gln-Lys-Gly-Glu-Lys-Gly-Pro-Gly-Pro-Pro-Gly-Pro-  
Ala-Gly-Glu-Arg-Gly-Pro-Ile-Gly-Pro-Ala-Gly-Pro-Pro-Glu-Arg-  
Gly-Gly-Lys-Gly-Ser-Lys-Gly-Ser-Gln-Gly-Pro-Lys-Gly-Ser-Arg-Gly-  
Ser=Pro=Gly-Lys=Pro=Gly-Pro=Gln=Gly-Pro=Ser=Gly-Asp=Pro=Gly-Pro-  
Pro=Gly-Pro-Pro-Gly-Lys-Glu-Gly-Leu-Pro-Gly-Pro=Gln=Gly-Pro-Pro-  
Gly-Phe-Gln=Gly-Leu-Gln=Gly-Thr Val=Gly-Glu>Pro=Gly-Val-Pro-Gly-  
Pro-Arg-Gly-Leu-Pro=Gly-Leu-Pro-Gly-Val-Pro=Gly-Met-Pro-Gly-Pro-  
Lys-Gly-Pro-Pro-Gly-Pro-Pro-Gly-Pro-Ser=Gly-Ala-Val-Val-Pro-Leu-  
Ala-Leu-Gln-Asn-Glu-Pro-Thr Pro-Ala-Pro=Glu-Asn=Gly-Cys-Pro-  
Pro=His-Trp-Lys-Asn-Phe-Thr-Asp-Lys-Cys-Tyr-Tyr-Phe-Ser=Val=Glu-  
Lys-Glu-Ile-Phe-Glu-Asp-Ala-Lys-Leu-Phe-Cys-Glu-Asp-Lys-Ser-Ser-  
His-Leu-Val-Phe-Ile-Asn-Thr-Arg-Glu-Glu-Gln-Gln-Trp>Ile-Lys-Lys-  
Gln-Met-Val-Gly-Arg-Glu-Ser=His-Trp-Ile-Gly-Leu-Thr-Asp-Ser=Glu-  
Arg-Glu-Asn=Glu-Trp-Lys-Trp>Leu-Asp=Gly-Thr-Ser-Pro-Asp-Tyr-Lys-  
Asn-Trp-Lys-Ala-Gly-Gln-Pro-Asp-Asn-Trp-Gly-His-Gly-His-Gly-Pro-  
Gly-Glu-Asp-Cys-Ala-Gly-Leu-Ile-Tyr-Ala-Gly-Gln-Trp-Asn-Asp-Phe-  
Gln-Cys-Glu-Asp=Val-Asn-Asn-Phe-Ile-Cys-Glu-Lys-Asp-Arg-Glu-Thr-  
Val-Leu-Ser-Ser-Ala-Leu (SEQ ID NO: 2, 206-547).

15. A novel collectin comprising the amino acid sequence:

Met-Lys-Leu-Val-Asp-Ser-Lys-His-Gly-Gln-Leu-Ile-Lys-Asn-Phe-Thr-  
Ile-Leu-Gln-Gly-Pro-Pro-Gly-Pro-Arg-Gly-Pro-Arg-Gly-Asp-Arg-Gly-

Ser-Gln-Gly-Pro-Pro-Gly-Pro-Thr-Gly-Asn-Lys-Gly-Gln-Lys-Gly-Glu-  
Lys-Gly-Glu-Pro-Gly-Pro-Pro-Gly-Pro-Ala-Gly-Glu-Arg-Gly-Pro-Ile-  
Gly-Pro-Ala-Gly-Pro-Pro-Gly-Glu-Arg-Gly-Gly-Lys-Gly-Ser-Lys-Gly-  
Ser-Gln-Gly-Pro-Lys-Gly-Ser-Arg-Gly-Ser-Pro-Gly-Lys-Pro-Gly-Pro-  
5 Gln-Gly-Pro-Ser-Gly-Asp-Pro-Gly-Pro-Pro-Gly-Pro-Pro-Gly-Lys-Glu-  
Gly-Leu-Pro-Gly-Pro-Gln-Gly-Pro-Pro-Gly-Phe-Gln-Gly-Leu-Gln-Gly-  
Thr-Val-Gly-Glu-Pro-Gly-Val-Pro-Gly-Pro-Arg-Gly-Leu-Pro-Gly-Leu-  
Pro-Gly-Val-Pro-Gly-Met-Pro-Gly-Pro-Lys-Gly-Pro-Pro-Gly-Pro-Pro-  
Gly-Pro-Ser-Gly-Ala-Val-Val-Pro-Leu-Ala-Leu-Gln-Asn-Glu-Pro-Thr-  
10 Pro-Ala-Pro-Glu-Asp-Asn-Gly-Cys-Pro-Pro-His-Trp-Lys-Asn-Phe-Thr-  
Asp-Lys-Cys-Tyr-Tyr-Phe-Ser-Val-Glu-Lys-Glu-Ile-Phe-Glu-Asp-Ala-  
Lys-Leu-Phe-Cys-Glu-Asp-Lys-Ser-Ser-His-Leu-Val-Phe-Ile-Asn-Thr-  
Arg-Glu-Glu-Gln-Gln-Trp-Ne-Lys-Lys-Gln-Met-Val-Gly-Arg-Glu-Ser-  
His-Trp-Ile-Gly-Leu-Thr-Asp-Ser-Glu-Arg-Glu-Asn-Glu-Trp-Lys-Trp-  
Leu-Asp-Gly-Thr-Ser-Pro-Asp-Tyr-Lys-Asn-Trp-Lys-Ala-Gly-Gln-Pro-  
Asp-Asn-Trp-Gly-His-Gly-His-Gly-Pro-Gly-Glu-Asp-Cys-Ala-Gly-Leu-  
Ile-Tyr-Ala-Gly-Gln-Trp-Asn-Asp-Phe-Gln-Cys-Glu-Asp-Val-Asn-Asn-  
20 Phe-Ile-Cys-Glu-Lys-Asp-Arg-Glu-Thr-Val-Leu-Ser-Ser-Ala-Leu (SEQ ID NO: 2,  
229-547).

16. The novel collectin according to claim 15, wherein said novel collectin further comprises the following amino acid sequence upstream of the first methionine residue (SEQ ID NO: 2, 229):

Met-Glu-Glu (SEQ ID NO: 2, 226-228); or

25 Met-Arg-Ser-Arg-Leu-Asp-Thr-Glu-Val-Ala-Asn-Leu-Ser-Val-Ile-Met-Glu-Glu (SEQ ID NO: 2, 211-228).

17. The novel collectin according to claim 15, wherein said novel collectin further comprises the following amino acid sequence upstream of the first methionine residue (SEQ ID NO: 2, 229):

Met-Glu-Asn-Ile-Thr-Thr-Ile-Ser-Gln-Ala-Asn-Glu-Gln-Asn-Leu-Lys-  
5 Asp-Leu-Gln-Asp-Leu-His-Lys-Asp-Ala-Glu-Asn-Arg-Thr-Ala-Ile-Lys-  
Phe-Asn-Gln-Leu-Glu-Glu-Arg-Phe-Gln-Leu-Phe-Glu-Thr-Asp-Ile-Val-  
Asn-Ile-Ile-Ser-Asn-Ile-Ser-Tyr-Thr-Ala-His-His-Leu-Arg-Thr-Leu-  
Thr-Ser-Asn-Leu-Asn-Glu-Val-Arg-Thr-Thr-Cys-Thr-Asp-Thr-Leu-Thr-  
Lys-His-Thr-Asp-Asp-Leu-Thr-Ser-Leu-Asn-Asn-Thr-Leu-Ala-Asn-Ile-  
10 Arg-Leu-Asp-Ser-Val-Ser-Leu-Arg-Met-Gln-Gln-Asp-Leu-Met-Arg-Ser-  
Arg-Leu-Asp-Thr-Glu-Val-Ala-Asn-Leu-Ser-Val-Ile-Met-Glu-Glu (SEQ ID NO: 2,  
102-228);

Met-Asn-Ser-Gln-Leu-Asn-Ser-Phe-Thr-Gly-Gln-Met-Glu-Asn-Ile-Thr-  
Thr-Ile-Ser-Gln-Ala-Asn-Glu-Gln-Asn-Leu-Lys-Asp-Leu-Gln-Asp-Leu-  
15 His-Lys-Asp-Ala-Glu-Asn-Arg-Thr-Ala-Ile-Lys-Phe-Asn-Gln-Leu-Glu-  
Glu-Arg-Phe-Gln-Leu-Phe-Glu-Thr-Asp-Ile-Val-Asn-Ile-Ile-Ser-Asn-  
Ile-Ser-Tyr-Thr-Ala-His-His-Leu-Arg-Thr-Leu-Thr-Ser-Asn-Leu-Asn-  
Glu-Val-Arg-Thr-Thr-Cys-Thr-Asp-Thr-Leu-Thr-Lys-His-Thr-Asp-Asp-  
Leu-Thr-Ser-Leu-Asn-Asn-Thr-Leu-Ala-Asn-Ile-Arg-Leu-Asp-Ser-Val-  
20 Ser-Leu-Arg-Met-Gln-Gln-Asp-Leu-Met-Arg-Ser-Arg-Leu-Asp-Thr-Glu-  
Val-Ala-Asn-Leu-Ser-Val-Ile-Met-Glu-Glu (SEQ ID NO: 2, 91-228);

Met-Asn-Leu-Asn-Asn-Leu-Asn-Leu-Thr-Gln-Val-Gln-Gln-Arg-Asn-Leu-  
Ile-Thr-Asn-Leu-Gln-Arg-Ser-Val-Asp-Asp-Thr-Ser-Gln-Ala-Ile-Gln-  
Arg-Ile-Lys-Asn-Asp-Phe-Gln-Asn-Leu-Gln-Gln-Val-Phe-Leu-Gln-Ala-  
25 Lys-Lys-Asp-Thr-Asp-Trp-Leu-Lys-Glu-Val-Gln-Ser-Leu-Gln-Thr-  
Leu-Ala-Ala-Asn-Asn-Ser-Ala-Leu-Ala-Lys-Ala-Asn-Asn-Asp-Thr-Leu-  
Glu-Asp-Met-Asn-Ser-Gln-Leu-Asn-Ser-Phe-Thr-Gly-Gln-Met-Glu-Asn-

Ile-Thr-Thr-Ile-Ser-Gln-Ala-Asn-Glu-Gln-Asn-Leu-Lys-Asp-Leu-Gln-  
Asp-Leu-His-Lys-Asp-Ala-Glu-Asn-Arg-Thr-Ala-Ile-Lys-Phe-Asn-Gln-  
Leu-Glu-Glu-Arg-Phe-Gln-Leu-Phe-Glu-Thr-Asp-Ile-Val-Asn-Ile-Ile-  
Ser-Asn-Ile-Ser-Tyr-Thr-Ala-His-His-Leu-Arg-Thr-Leu-Thr-Ser-Asn-  
5 Leu-Asn-Glu-Val-Arg-Thr-Thr-Cys-Thr-Asp-Thr-Leu-Thr-Lys-His-Thr-  
Asp-Asp-Leu-Thr-Ser-Leu-Asn-Asn-Thr-Leu-Ala-Asn-Ile-Arg-Leu-Asp-  
Ser-Val-Ser-Leu-Arg-Met-Gln-Gln-Asp-Leu-Met-Arg-Ser-Arg-Leu-Asp-  
Thr-Glu-Val-Ala-Asn-Leu-Ser-Val-Ile-Met-Glu-Glu (SEQ ID NO: 2, 9-228); or  
Met-Tyr-Ser-His-Asn-Val-Val-Ile-Met-Asn-Leu-Asn-Asn-Leu-Asn-Leu-  
10 Thr-Gln-Val-Gln-Gln-Arg-Asn-Leu-Ile-Thr-Asn-Leu-Gln-Arg-Ser-Val-  
Asp-Asp-Thr-Ser-Gln-Ala-Ile-Gln-Arg-Ile-Lys-Asn-Asp-Phe-Gln-Asn-  
Leu-Gln-Gln-Val-Phe-Leu-Gln-Ala-Lys-Lys-Asp-Thr-Asp-Trp-Leu-Lys-  
Glu-Lys-Val-Gln-Ser-Leu-Gln-Thr-Leu-Ala-Ala-Asn-Asn-Ser-Ala-Leu-  
Ala-Lys-Ala-Asn-Asn-Asp-Thr-Leu-Glu-Asp-Met-Asn-Ser-Gln-Leu-Asn-  
15 Ser-Phe-Thr-Gly-Gln-Met-Glu-Asn-Ile-Thr-Thr-Ile-Ser-Gln-Ala-Asn-  
Glu-Gln-Asn-Leu-Lys-Asp-Leu-Gln-Asp-Leu-His-Lys-Asp-Ala-Glu-Asn-  
Arg-Thr-Ala-Ile-Lys-Phe-Asn-Gln-Leu-Glu-Glu-Arg-Phe-Gln-Leu-Phe-  
Glu-Thr-Asp-Ile-Val-Asn-Ile-Ile-Ser-Asp-Ile-Ser-Tyr-Thr-Ala-His-  
His-Leu-Arg-Thr-Leu-Thr-Ser-Asn-Leu-Asn-Glu-Val-Arg-Thr-Thr-Cys-  
20 Thr-Asp-Thr-Leu-Thr-Lys-His-Thr-Asp-Asp-Leu-Thr-Ser-Leu-Asn-Asn-  
Thr-Leu-Ala-Asn-Ile-Arg-Leu-Asp-Ser-Val-Ser-Leu-Arg-Met-Gln-Gln-  
Asp-Leu-Met-Arg-Ser-Arg-Leu-Asp-Thr-Glu-Val-Ala-Asn-Leu-Ser-Val-  
Ile-Met-Glu-Glu (SEQ ID NO: 2, 1-228).

25 18. The novel collectin according to any one of claims 13 to 17, which is derived from human.

19. The novel collectin consisting of the amino acid sequence that comprises deletion, substitution and/or addition of one or more amino acids in the collectin according to any one of claims 13 to 18, and said novel collectin comprises (1)  $\text{Ca}^{2+}$ -dependent carbohydrate recognition domain (CRD), and (2) collagen-like region.

5

20. A vector which comprises the polynucleotide according to any one of the claims 1 to 12 in a manner that allows expression of the novel collectin.

10

21. A host cell comprising the vector according to claim 20 in a manner that allows the expression.

15

22. A probe for screening the novel collectin related molecular species comprising the polynucleotide according to any one of claims 1 to 12 or a fragment thereof.

20

23. An antibody having specific immunoreactivity with the novel collectin according to any one of claims 13 to 19.

25

24. The antibody according to claim 23, which is a monoclonal antibody.

20

25. The antibody according to claim 23 or 24 having reduced immunogenicity to human.

25

26. A method for obtaining a novel collectin related molecular species, comprising screening a protein using the antibody according to any one of claims 23 to 25.

30

27. A method for obtaining a novel collectin and/or derived molecules, comprising screening a protein using the antibody according to any one of claims 23 to 25.

30

28. The method according to claim 26 or 27, wherein said screening is expression screening of cDNA library.

5            29. A method of quantitative determination of a novel collectin and/or derived molecules, comprising measuring an amount of the novel collectin and/or derived molecules contained in a test sample using the antibody according to any one of claims 23 to 25.

10            30. The method according to claim 29, wherein said antibody is employed in ELISA method.

15            31. A kit for quantitative determination of a novel collectin and/or derived molecules, comprising the antibody according to any one of claims 23 to 25, wherein an amount of the novel collectin and/or derived molecules in a test sample is measured by ELISA method using the antibody.

20            32. A method for obtaining a novel collectin and/or derived molecules, comprising isolating a novel collectin and/or derived molecules using the antibody according to any one of claims 23 to 25.

25            33. The method according to claim 32, wherein affinity chromatography by a support bound with said antibody, and/or immunoprecipitation is utilized.

30            34. The method according to claim 32 or 33, comprising expressing the novel collectin from the polynucleotide according to any one of claims 1 to 12 prior to the isolation step.

35. A transgenic non-human animal that is stably introduced with a recombinant gene comprising the polynucleotide according to any one of claims 1 to 12 into the chromosome, and that can express a novel collectin.

36. A transgenic non-human animal wherein introduction of a gene is effected in a non-human animal comprising a homologue of the novel collectin according to any one of claims 13 to 19, in a manner to modify the gene expression of said homologue.

37. A knockout ~~non-human animal~~ that is obtained by altering a gene encoding a homologue of the novel collectin according to any one of claims 13 to 19 in a non-human animal comprising said homologue, in a manner to inhibit the expression of said homologue.

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A D C  
B<sup>2</sup>